

WHAT IS CLAIMED IS:

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1. A method for controlling traffic flow in a network, comprising:
generating a set of control weights relating to network traffic flow based on at least a best-neighbor approach; and
controlling traffic flow in the network using the set of control weights.
 2. The method of claim 1, wherein the best-neighbor approach is a modified the best-neighbor approach that uses at least an anti-cycling technique.
 3. The method of claim 1, wherein the best-neighbor approach is a modified the best-neighbor approach that uses at least an impatience technique.
 4. The method of claim 1, wherein generating the set of control weights is further based on at least a diversification process.
 5. The method of claim 4, wherein the diversification process is a limited-range diversification process.
 6. The method of claim 2, wherein the best-neighbor approach is a modified the best-neighbor approach that uses at least an impatience technique.
 7. The method of claim 6, wherein generating the set of control weights is further based on at least a diversification process.
 8. The method of claim 7, wherein the diversification process is a limited-range diversification process.
 9. The method of claim 6, wherein generating a set of control weights is further based on a piece-wise linear cost function.
 10. The method of claim 3, wherein generating the set of control weights includes:
generating a set of first weights;
evaluating a first traffic cost based on at least the set of first weights;
generating a set of second weights based on the set of first weights and the best-neighbor approach;
evaluating a second traffic cost based on at least the set of second weights;
and
selecting the control weights based on at least the first traffic cost and the second traffic costs.

1 11. The method of claim 10, wherein generating the set of second weights is
2 further based on at least a rarefied neighborhood search.

1 12. The method of claim 10, wherein generating the set of second weights is
2 further based on a dynamic graph technique.

1 13. An apparatus for controlling traffic flow in a network, comprising:
2 a weight device that generates a set of control weights based on a best-
3 neighbor approach; and
4 at least one network node that receives one or more control weights of the
5 set of control weights, and controls traffic flow in the network based at least the one or
6 more control weights.

1 14. The method of claim 13, wherein best-neighbor approach is a modified
2 best-neighbor approach that uses at least one of an anti-cycling mechanism and an
3 impatience mechanism.

1 15. The apparatus of claim 14, wherein best-neighbor approach is a modified
2 best-neighbor approach that uses at least an anti-cycling mechanism and an impatience
3 mechanism.

1 16. The apparatus of claim 13, wherein the weight device includes a
2 diversification device that performs at least one diversification process.

1 17. The apparatus of claim 16, wherein the diversification process is a limited-
2 range diversification process.

1 18. The apparatus of claim 15, wherein the weight device includes a
2 diversification device that performs at least one diversification process.

1 19. The apparatus of claim 16, wherein the weight device includes a cost
2 calculator that calculates at least the cost of at least one control weight of the set of
3 control weights based on a piece-wise linear cost function having two or more segments.

1 20. The apparatus of claim 15, wherein the weight device includes a
2 diversification device that performs at least one diversification process.

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